iRZ MC52PU GPRS class 8/10 GSM modem

USER MANUAL

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1. Safety Requirements

Restrictions for the usage of the device in the vicinity of other electronic devices:

- turn off the modem in hospitals or in the vicinity of medical equipment (e.g. cardiostimulators, hearing aids). It can cause interference for medical equipment;
- turn off the modem in aircrafts. Take measures against accidental activation;
- turn off the modem in the vicinity of gas-filling stations, chemical enterprises, blasting work places. It can cause interference to technical devices;
- at a short range the modem may cause harmful interference to TV and radio receivers.

Prevent the modem from dust and moisture.

Improper use deprives you of all warranty claims.

2. General Information

2.1. Purpose of the Device

The modem iRZ MC52PU is a structurally accomplished GSM modem designed for reception and transmission of data, text messages and telecopies. It is excellently adjusted both for mobile Internet Access and for industrial applications — telemetry, wireless data collection from sensors, remote surveillance, monitoring and signaling.

The control is performed by means of standard AT commands. The modem is equipped with light-emitting diodes (LEDs) enabling to monitor the status of connection.

This model has been extended functionality, including - be able to reboot the modem signal DTR. This model is equipped with intellectual watchdog timer just like all other iRZ modems.

2.2. Configuration

Complete set of the GSM modem IRZ MC52PU:

- modem iRZ MC52PU,
- label,
- factory box.

2.3. Parameters

Basic parameters:

- frequency ranges: GSM 900/1800 mHz or 850/900/1800/1900 mHz (determined by the GSM module);
- power output:
  - 2W (class 4 for EGSM900),
  - 1W (class 1 for GSM1800),

- GPRS class 8/10 (determined by the GSM module);
  - TCP/IP stack available through AT commands;
  - MC class B;
  - CSD up to 14.4 kbps;
  - USSD;
  - SMS;
  - voice transmission;
  - fax group 3: class 1.

Electric power supply:

- power supply voltage from 9 to 25 V;
- absorbed current not more than:
  - with power supply voltage +12 V – 200mA;
  - with power supply voltage +24 V – 100mA.

Physical parameters:

- size not more than 69x74x33 mm,
- weight not more than 100 g.,
- operating-temperature range from -20°C to +65°C,
- storage temperature range from -40°C to +85°C.

Interfaces:

- connector RJ11 for power supply connection,
- connector USB B for USB interface connection,
- connector DB9 for connection of the data cable RS-232,
- connector FME for GSM antenna connection.

2.4. Exterior Appearance

The modem MC52PU is a compact device completed in a plastic housing. The external appearance is represented on Fig.2.4.1 and Fig.2.4.2.

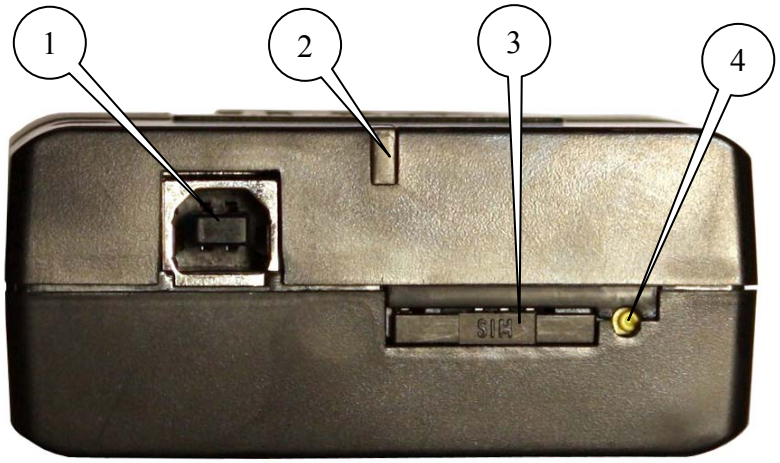

Fig.2.4.1 Front view.

Fig.2.4.2 Back view.

On the figures the digits signify the following:

1. connector USB B for USB interface connection,
2. network LED indicator,
3. SIM card tray,
4. SIM card tray extracting button,
5. connector DB9 for connection of the data cable RS232,
6. connector RJ11 for power supply connection
7. connector FME for GSM antenna connection.

2.5. Interfaces

2.5.1. Connector DB9 (RS232)

The connector is used for connection to the control device, exchange protocol RS232.

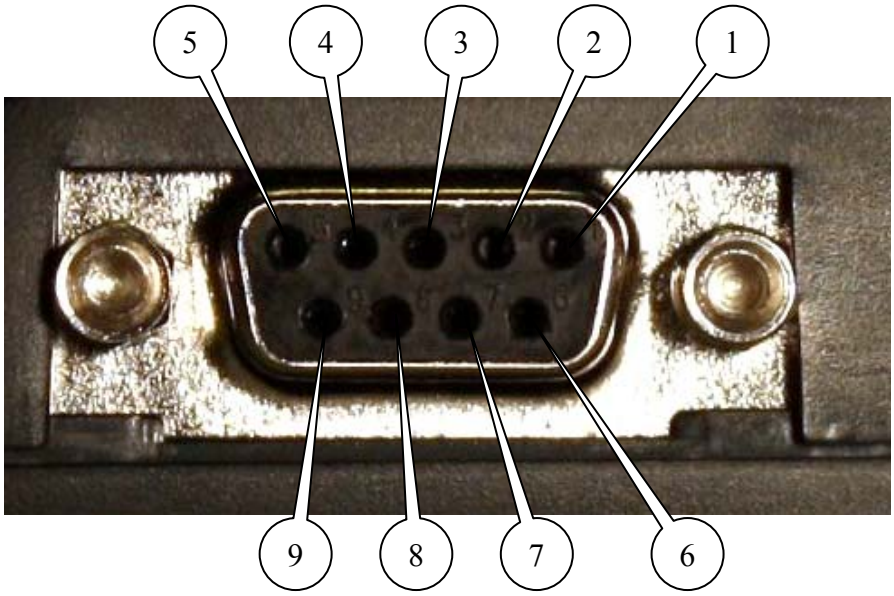

Fig.2.5.1 Connector DB9

Таблица 2.5.1 Назначение выводов разъёма.

Pin	Signal	Direction	Purpose
1	not used		closed on the housing system
2	RXD	Modem-PC	Data reception
3	TXD	PC-Modem	Data transmission
4	DTR	PC-Modem	to start and reset the modem (as described in section 3.3)
5	GND	general	System housing
6	not used		closed on the housing system
7	RTS	PC-Modem	Request for transmission
8	CTS	Modem-PC	Availability of transmission
9	not used		closed on the housing system

2.5.2. Power supply connector RJ11

The connector is used for connection of electric power supply.

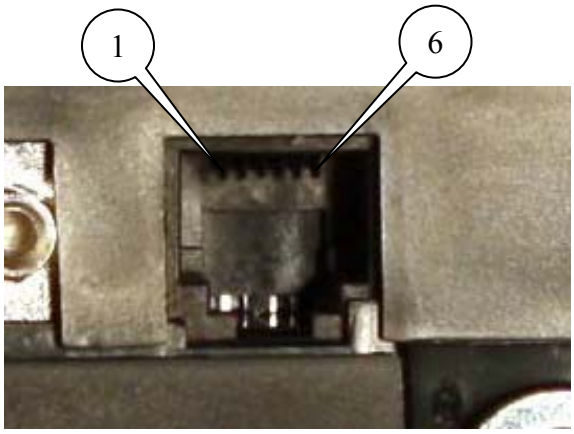

Fig.2.5.2 Connector RJ11

Table 2.5.2 Purpose of power supply connector pins.

Contact	Signal	Purpose
1	+ 12V	Positive pole of DC supply voltage. Protected with a fuse and the protection circuit against voltage-surge (with voltage infeed rate more than 30V) and incorrect polarity.
2	not used	
3	not used	
4	not used	
5	not used	
6	GND	System housing

2.5.3. Connector USB B

Connector USB B used to connect the control device.

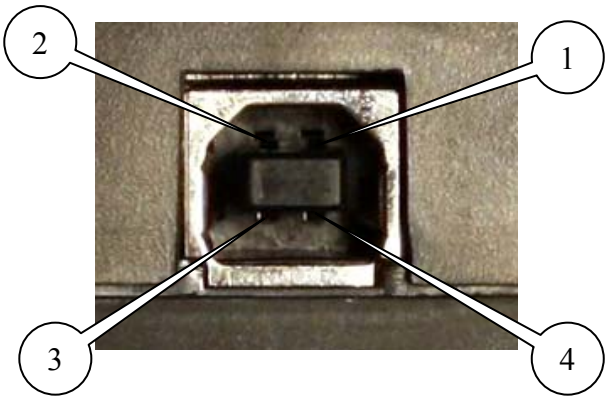

Fig.2.5.3 Connector USB B

Table 2.5.2 Purpose of power supply connector pins.

Contact	Signal	Purpose
1	V BUS	+5 V (can be used to power the modem.more detail in Chapter 3)
2	D−	Data transmission
3	D+	Data transmission
4	GND	System housing

2.6. Modem Status Indication

LED indication is provided in the modem for connection status indication.

Table 2.6.1 Connection status indication

Indication mode	Operation mode
Turned off	Modem is turned off or there is an emergency situation
600 ms on / 600 ms off	Modem is not registered in the network
75 ms on / 3 s off	Modem is registered in the network
75 ms on / 75 ms off / 75 ms on / 3 s off	GPRS connection is installed
500 ms on / 50 ms off	Data transmission is underway

3. Connection and Setting Up

3.1. Functional scheme of a modem

Functional scheme of a modem presented on fig.3.1.

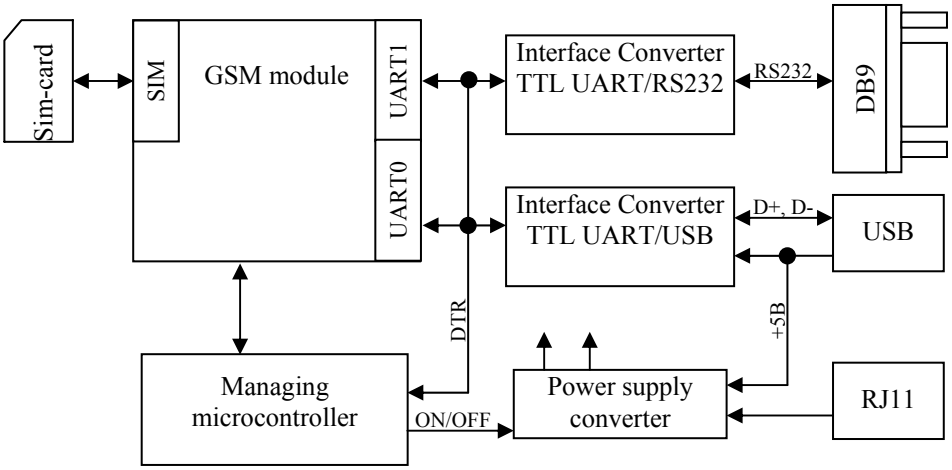

Fig.3.1 Functional scheme

3.2. Connection

Before feeding the power supply you need to install the SIM card in the modem (the SIM card must be enabled). To do this, you need:

- to extract the SIM tray by pressing the SIM tray extract button (Fig. 2.4.1);
- to install the SIM card into the SIM tray;
- to insert the SIM tray with the SIM card into the modem.

No strong physical efforts must be applied while installing the SIM card.

Connect the GSM antenna to the antenna connector, as well as the commutating cable (RS232). Feed power supply to the modem through the connector RJ11 (Fig. 2.4.2).

Note: GSM antenna, data cables and electrical power unit are not included in the complete set configuration.

After the power supply feeding, registration occurs automatically, which is signaled by the green indicator frequent flashing. After the registration is completed, the modem jumps to the operating mode, the green indicator flashes less frequently (Table 2.6.1).

3.3. Control, Restarting and Power Off

The modem control is performed by standard AT commands. For additional information and support visit the manufacturer's site – *www.radiofid.ru*.

Modem restarting can be carried out by the following ways:

- by eight jumpings of the DTR COM port line into passive state (DTR < 3V), duration of pulses and the pauses between the pulses must lie within the range 100-500 ms,
- by temporary power-off.

The modem can be powered off using the following ways:

- by the program method, using AT commands (escape to the power standby mode);
- directly by power-off.

After power-off made by means of AT commands, the modem escapes to the power standby mode (minimum power consumption). Escaping from the power standby mode is performed upon the DTR of the COM port.

Modem control to DTR also applies to the USB interface. After installing the driver must appear a virtual COM-port.